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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/816,879	04/05/2004	Michio Horiuchi	300.1153	2665

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EXAMINER	
WALKER, KEITH D	

ART UNIT	PAPER NUMBER
1795	

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08/01/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/816,879	HORIUCHI ET AL.	
	Examiner	Art Unit	
	KEITH WALKER	1795	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *13 November 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-6* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-6* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 5/19/08 has been entered.

All claims are drawn to the same invention claimed in the application prior to the entry of the submission under 37 CFR 1.114 and could have been finally rejected on the grounds and art of record in the next Office action if they had been entered in the application prior to entry under 37 CFR 1.114. Accordingly, **THIS ACTION IS MADE FINAL** even though it is a first action after the filing of a request for continued examination and the submission under 37 CFR 1.114. See MPEP § 706.07(b). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Response to Amendment

Claim 7 is cancelled and Claims 1-6 are pending examination as discussed below.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

1. Claims 1-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP Publication 08-050914 (Iwazawa) in view of JP Publication 06-196176 (Niikura).

Iwazawa teaches a fuel cell device comprising at least two fuel cells that are arranged such that the anode layer of the first fuel cell faces the anode of the second fuel cell with a predetermined space in between (Fig. 4; [0031-0035]). The space is open at both ends of the fuel cell. The fuel cell has a fuel supply unit supplying gaseous fuel to the anode electrode.

Iwazawa is silent to a flame formed in the space between the anodes or flat shaped fuel cells.

Niikura teaches using a flame for the fuel cells to raise and keep the temperature of the fuel cell at an operational temperature (Abstract, [0019]). The fuel cell has either

a tubular or flat plate shape, as is well known in the art and is also taught by Niikura (Figs 1 & 2). The anode layer is directly exposed to the flame and the cathode is isolated from the flame but exposed to air (Fig. 5; [0019]). The motivation for using the flames is to heat up the fuel cell so an outside power is not needed to warm up the fuel cell ([0011]).

Therefore it would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to modify the fuel cell supply unit with the flame-producing unit of Niikura to eliminate the need for extra heating units and improving safety ([0021,0022]).

Iwazawa is silent to the use of a liquid fuel for the fuel cell.

The use of liquid fuels such as methanol and ethanol are well known in the art. It would have been obvious to one having ordinary skill in the art at the time of the invention was made to use a liquid fuel instead of a gaseous fuel, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice (MPEP 2144.07).

2. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over JP Publication 08-050914 (Iwazawa) in view of JP Publication 06-196176 (Niikura) as applied to claim 1 and further in view of JP Publication 06-196172 (Okuyama).

The teachings of Iwazawa and Niikura as discussed above are incorporated herein.

Iwazawa and Niikura are silent to the anode comprising nickel oxide and lithium.

Okuyama teaches a solid oxide fuel cell using an anode made of nickel oxide and lithium (Abstract, [0009-0017]). The nickel oxide and lithium anode decreases the voltage drop in the fuel cell by decreasing the internal resistance of the fuel cell ([0006-0008]).

Therefore it would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to modify the anode of Iwazawa with the anode of Okuyama to increase the fuel cell performance by decreasing the internal resistance and the voltage drop of the fuel cell.

3. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over JP Publication 08-050914 (Iwazawa) in view of JP Publication 06-196176 (Niikura) as applied to claim 1 and further in view of US Patent 5,114,803 (Ishihara).

The teachings of Iwazawa and Niikura as discussed above are incorporated herein.

Iwazawa and Niikura are silent to using a liquid fuel.

Ishihara teaches a solid oxide fuel cell that can use any number of fuels such as natural gas, methanol, coal reformed gas and heavy oil (Abstract, 1:5-20).

Iwazawa and Niikura disclose the claimed invention except that gaseous fuel is used instead of a liquid fuel. Ishihara teaches that liquid fuel is an equivalent structure known in the art. Therefore, because these two types of fuel were art-recognized

equivalents at the time the invention was made, one of ordinary skill in the art would have found it obvious to substitute the liquid fuel for the gaseous fuel.

Response to Arguments

Applicant's arguments filed 11/13/07 have been fully considered but they are not persuasive.

In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). Applicant's deconstruction of the combination of references and teachings to provide a piecemeal comparison to the claims is not a proper showing or persuasive showing of nonobviousness.

Applicant argues Iwazawa doesn't teach a space where a flame extends because the reference doesn't teach oxidation gas flowing into the anode space. The fact that Iwazawa doesn't teach a flame extending into the anode space is already established, as discussed in the rejection. Hence the teachings of Niikura are used to teach using a flame in the anode area to both supply the fuel cell with heat and fuel to the anode to produce power. It is the combination of references that teach and obviate the instant claimed invention.

Applicant argues figure 1 of Niikura does not show a flame directly applied to the anode. However, the flame is applied directly to the anode structure in figure 5.

Applicant alleges Niikura does not teach a predetermined space which surrounds the anode layer. However, this feature is taught by Iwazawa and it is the combination of references that obviates the instant claimed invention.

Conclusion

All claims are drawn to the same invention claimed in the earlier application and could have been finally rejected on the grounds and art of record in the next Office action if they had been entered in the earlier application. Accordingly, **THIS ACTION IS MADE FINAL** even though it is a first action in this case. See MPEP § 706.07(b). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no, however, event will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to KEITH WALKER whose telephone number is (571)272-3458. The examiner can normally be reached on Mon. - Fri. 8am - 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan can be reached on 571-272-1292. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

K. Walker

/PATRICK RYAN/
Supervisory Patent Examiner, Art Unit 1795